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A STUDY OF THE LUMBER INDUSTRY IN IDAHO, PART I.

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A REVIEW OF LITERATURE TREATING NATIONAL, STATE, AND REGIONAL INFORMATION RELATING TO "HARVESTING," "PRIMARY MANUFACTURING," AND EMPLOYMENT IN THE LUMBER INDUSTRY REVEALED THERE HAVE BEEN FEW STUDIES OF EMPLOYEES AND THE KINDS OF JOBS THEY PERFORM. THE TOTAL CONTRIBUTION OF THE TIMBER-BASED INDUSTRY WAS ABOUT 25 BILLION DOLLARS ANNUALLY IN THE LATE FIFTIES AND EARLY SIXTIES. FROM 1955-65, NATIONAL PRODUCTION OF PULPWOOD INCREASED 33 PERCENT, AND PRODUCTION OF VENEER LOGS INCREASED 77 PERCENT. SAW LOG PRODUCTION FLUCTUATED, BUT NO TREND DEVELOPED. IDAHO REPRESENTED ABOUT 6 PERCENT OF THE WESTERN UNITED STATES TIMBER PRODUCTION. IN 1964, EMPLOYMENT IN LUMBERING ACCOUNTED FOR 4.5 TO 5 PERCENT OF THE STATE'S LABOR FORCE AND 20 TO 30 PERCENT IN SOME COUNTIES. LUMBERING EMPLOYMENT WAS 12,136 IN 1950, 14,694 IN 1956, AND 12,879 IN 1964. THIS REPRESENTED A PERCENTAGE DECLINE FROM 5.3 IN 1950 TO 5.1 IN 1964 WHEN COMPARED WITH THE TOTAL LABOR FORCE. AN 8 PERCENT DECREASE IN EMPLOYMENT WAS PROJECTED FOR THE PERIOD 1962-85. (EM)

A STUDY OF THE LUMBER INDUSTRY IN IDAHO
PART I

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A STUDY OF THE LUMBER INDUSTRY IN IDAHO
PART I

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FOREWORD

This report is Part I of a study of the lumber industry in Idaho conducted by the State Occupational Research Unit at the University of Idaho. This portion of the study dealt with background material on the scope and general characteristics of lumbering in the United States, the Pacific Northwest, and the State of Idaho. Part II will deal with certain psychological and sociological characteristics of lumber workers. Part III will contain the results of a large number of personal visits and interviews with persons in the Idaho lumber industry, and data obtained from a number of questionnaires. Part IV, only tentatively planned at this time, will contain a report of a study of logging.

The terms "lumber industry," "lumber," and "lumbering" are used a little loosely in this report. We believe, however, that our usage will not result in undue confusion if the reader will pay close attention to the context. The above terms, when appearing in sections of a general nature, include logging, veneer and plywood, paper and allied products, and miscellaneous, as well as common lumber production. Such terms as "forest products industry," and "timber based," were not used, as they seem to imply forestry activities on the one hand, and transportation and marketing activities on the other. This interpretation is broader than the actual scope of our study. In some parts of this report, the terms "lumber industry," "lumber," and "lumbering," refer more specifically to lumber production *per se*, as opposed to veneer and plywood, and paper and allied products. The context should indicate when the more restricted meaning is intended.

We wish to thank the many hundreds of persons in the following companies who extended us their cooperation, advice, and assistance:

Anderson & Vance Lumber Co., Fernwood
Arrow Tie Mill, Sandpoint
Atlas Tie Co., Coeur d'Alene
Boise Cascade Corporation, Boise, Emmett, and McCall
Clearwater Lumber Co., Spalding
Diamond National Corporation, Coeur d'Alene
Fernwood Tie Mill Co., Fernwood
Hutchins Lumber, Inc., Weippe
Idapine Mills, Inc., Grangeville
Jaype Mill, Potlatch Forests, Inc., Pierce
J. O. Battles & Son Lumber Co., Weippe
Johnstun Bros., Inc., Weippe
Joslyn Mfg. & Supply Co., Bovill and Sandpoint
McCann, Joe, Lewiston
Naples Lumber Co., Naples
P & E Woodworking, Inc., Sandpoint
Pack River Lumber Co., Sandpoint
Potlatch Forests, Inc., Coeur d'Alene, Lewiston, and Potlatch
Rauch Lumber Co., Inc., Troy
Regulus Stud Mill, Inc., St. Maries
Schmidt Bros., Inc., Weippe
St. Maries Plywood Co., St. Maries
Tyson Creek Mill Co., Santa

Others who supplied questionnaire data cannot be listed due to lack of space.

A STUDY OF THE LUMBER INDUSTRY IN IDAHO

The lumber industry is an important primary sector of the Idaho economy. The northern part of the state, especially, depends on lumbering for an important part of its livelihood. Statewide, employment in lumbering (including paper and pulp, and veneer and plywood) averages some 4.5% to 5.0% of the Civilian Labor Force. Lumbering employment in the ten northern counties, however, averages some 15% to 20% of the Civilian Labor Force--more than 30% in some areas. (See, for example, Employment Security Agency, 1964, and various issues of Idaho Employment) A survey of available literature revealed that there have been few studies of the persons employed in this industry and the kinds of jobs they perform. Its importance economically, the shortage of previous research, and other reasons prompted the State Occupational Research Unit at the University of Idaho to undertake the present study.

The study of the lumber industry falls logically into three major divisions, although activities in all three divisions have been carried on intermittently and sometimes simultaneously during a period of several months. The divisions are:

1. A study of national statistics and statewide and regional statistics for Idaho, together with publications pertaining to industrial outlook in the lumber industry.

2. A survey of psychological and related literature for studies of workers in the lumber industry.

3. Field research in more than twenty mills of various types in Idaho, ranging geographically from Sandpoint in the northern panhandle area to Emmett in the southwestern area.

Number three is indicative of the field research completed to date, and is not intended to be so restrictive. Thus far, our field research has been restricted to different types of mills, but we hope to do some field research relative to logging in the future.

This publication is concerned with division 1, and the results of our research will be reported under a series of appropriate headings. Research on divisions 2 and 3 is still underway, and will be reported in subsequent publications.

LUMBERING IN THE UNITED STATES

The lumber industry operates in many sections of the United States, and is basic to the economy in many areas. The scope of the industry, value of produce, employment, and general outlook will be dealt with under the following headings.

Scope of the Lumber Industry

Hair made an extensive study which presents a good overview of the

lumber industry and its component parts. Hair (1963, p. 1) uses the term "timber-based," and includes the following economic activities: forest management (e.g. managing forest lands), harvesting (e.g. logging), primary manufacturing (e.g. sawing logs into lumber), secondary manufacturing (e.g. remanufacture of lumber into furniture), construction (e.g. buildings), and transportation and marketing (e.g. transporting finished products and marketing them through wholesale and retail channels). The present study of the State Occupational Research Unit defines lumbering in a narrower sense, equivalent to the harvesting and primary manufacturing activities described by Hair. On the other hand, Hair's study is most appropriate, in that a wider scope is necessary to account for all types of economic activities which, in whole or in part, depend on timber resources.

Hair did not assume, however, that all values added and the employment in the above six areas could be attributed directly to timber. He explains his method thus:

> All of the values added and the employment in forest management and harvesting activities, as defined in this report, were considered to be timber based and thus were attributed to timber. However, in the enterprises engaged in manufacturing, fabrication, construction, transportation, and trade where both timber and nontimber materials were used or handled, only portions of the total value added and the employment were attributed to timber. (Hair, 1963, p. 1)

The portions of total value and employment were made on a percentage basis, and the interested reader may consult Hair's publication for more detail.

Economic Value of Timber Based Activities

The value added to the national economy is estimated by Hair as follows:

> The sum of the values added in all kinds of timber-based economic activities amounted to about $25 billion in 1958. This represented 5.6 percent of the Nation's gross national product--the market value of all goods and services produced. This means that about $1 out of every $18 of gross national product originated in some kind of timber-based economic activity. (Hair, 1963, p. 5)

More recently, the Forest Service made a similar estimate:

> Values added attributable to timber harvesting, timber processing, manufacture of wood products, construction, and transportation and marketing of wood products in recent years have accounted for about $25 billion annually of the Nation's gross national product. (Forest Service, 1965, p. III)

Since the Forest Service study does not specifically mention forest management, it may be that a figure comparable to Hair's earlier quotation would be above the $25 billion mark.

Employment in the Lumber Industry

Employment in the lumber industry is fairly comparable, percentage-wise, to the total value added:

> Employment attributed to timber in all timber-based industries amounted to the equivalent of 3.3 million people in 1958. This represented more than 5 percent of total civilian employment in the United States and meant that about 1 person out of every 20 employed was engaged in some kind of timber-based economic activity. (Hair, 1963, p. 5)

The Forest Service (1965, p. III) states, a little less exactly, that "Timber-based economic activities employ more than 3 million workers."

General Outlook in the Lumber Industry

The most comprehensive and far-reaching projections located in our survey were those prepared by the Forest Service. By the year 2000, demands for timber products are projected to increase about 80 percent. The following excerpt from this study presents the projections in broad perspective:

> The projections of future demands for "industrial" wood products developed in this study rise from 10.7 billion cubic feet of roundwood in 1962 to 20.8 billion cubic feet by 2000. Projected use of all products including fuelwood rises from 11.8 billion cubic feet in 1962 to 21.3 billion cubic feet in 2000.
>
> To meet these projected demands for round wood, the cut of sawtimber in U. S. forests, after allowances for imports, is estimated to rise from 48.4 billion board feet in 1962 to 81 billion board feet in 2000.
>
> Projections for individual products show wide variations in prospective rates of growth in consumption. Estimated demands for pulpwood and for plywood and veneer by the end of the century are 2.7 times the 1962 level of consumption. Demands for lumber are projected to rise about 43 percent in this period. Use of fuelwood by 2000 is assumed to decline by a further 55 percent. (Forest Service, 1965, p. 1)

It is evident from the above figures that the lumber industry will continue to occupy an important place in the national economy. Excerpts from other studies which deal with both present characteristics and future projections in lumbering are presented in the following paragraphs.

Publications concerned primarily with activities during 1964 and 1965 indicate that the lumber industry was operating at a fairly high level. Hair and Ulrich (1965, p. 5) state that:

> During the last decade, production of pulpwood has grown by 33 percent and that of veneer logs by 77 percent. Saw log production has shown considerable fluctuation but no well-defined trend.

Hair and Ulrich (1965, p. 7) estimate lumber consumption in 1965 at about

40.4 billion board feet, slightly above 1964, and 6 per cent more than the average annual consumption over the past decade. The U. S. Department of Commerce (1965, p. 1) reported that:

> The 1964 production of softwood plywood totaled 11,455 million square feet, 3/8 inch basis. This total establishes a new all time high annual output, which continues the trend that has been reported each year since 1948.

The Business and Defense Services Administration (1965a, p. 3), in their January report, expected a new record in 1965 production and consumption of paper and board. In their September report (Business and Defense Services Administration, 1965b, p. 3), they observed that:

> Strong demand, fuller utilization of more efficient plant and equipment and higher prices through mid-1965 indicate that the U. S. paper and allied products industry should achieve record sales at improved profit levels in 1965.

The Business and Defense Services Administration, in their U. S. Industrial Outlook 1965, gave separate figures and predictions for several separate segments of the lumber industry. The following pertains mainly to sawmills:

> The year 1964 was a fairly favorable one for the lumber industry. First 8 months industry figures for 1964 showed production up 3.7 percent, shipments up 4.7 percent and orders up 3.3 percent.
> . . . . . .
> Total lumber consumption was up 4 percent over that of 1963 and 15 percent above the decade's low of 35.3 billion feet in 1960. (Business and Defense Services Administration, 1965c, p. 115)

The report for paper and board (Business and Defense Services Administration, 1965c, p. 117) is essentially similar to other studies cited earlier in this paragraph. The report for softwood plywood is epitomized in the following quotation:

> Softwood plywood production should continue a strong growth trend in 1965. The industry has scored new production records each year since 1945, with an average annual growth rate of 13 percent. (Business and Defense Services Administration, 1965c, p. 122)

As we went to press, the U. S. Industrial Outlook 1966 became available. Predictions for 1966 seem generally in line with those quoted above from the 1965 edition, namely, further modest gains for lumber, and new all-time highs for softwood plywood and paper and allied products. (Business and Defense Services Administration, 1965d, pp. 17-19; 20-22; 33-35)

Publications which give predictions for a period of several years tend generally to confirm the projections of future demands made by the Forest Service (1965), and quoted at the beginning of this section on page three. World demand for paper and pulp is forecast as follows by the

Food and Agriculture Organization of the United Nations (1960, p. 51):

> . . . total paper and paperboard demand in the world is expected to rise from about 56 million tons in 1955 to 90 million tons in 1965 and to no less than 141 millions in 1975. This is a very large increase indeed--of 150 percent--over 1955 consumption.

Guthrie and Armstrong (1961) made a comprehensive study of lumbering in eleven western states, and seem generally to conclude that pulp and paper, and veneer and plywood will show considerable growth by 1975, with lumber showing a more moderate growth. Since the Guthrie and Armstrong study is concerned with the eleven western states, further excerpts are reserved for the next division of this report entitled Lumbering in the Western States. The Committee on Interstate and Foreign Commerce made projections for pulp, paper, and board to 1970, based on two economic assumptions. Assumption A assumes a growth rate of the gross national product of 3 per cent per year. Assumption B assumes a 3½ per cent growth rate through 1963, and a 4 per cent rate thereafter. The following projections were made:

> Estimated U. S. required production of paper and board in 1970 will total 49.6 million tons under conditions projected in economic assumption A and 55.3 million tons under conditions projected in economic assumption B. . . . These tonnages would constitute increases of 39.3 and 55.4 percent, respectively, over the actual 1961 tonnage. (Committee on Interstate and Foreign Commerce, 1963, p. 16. See also p. 27)

LUMBERING IN THE WESTERN STATES

The term western states is used frequently in various reports, and writers vary regarding the particular states included. Our main interest here is in an area comprised of Washington, Oregon, northern Idaho, western Montana, and northern California. Several reports, however, include a larger area, and the states will be specified if the area is not clear from the context. Excerpts from four separate studies will be presented to show the relative importance of the lumbering industry in the western states. The headings were derived from the authors or organizations which conducted each study. Since foreign competition is an important factor in the lumber industry, this is discussed under the final heading of this division of our report.

The Guthrie and Armstrong Study

Guthrie and Armstrong (1961) made a comprehensive study of lumbering in the eleven western states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Data also were included for the Province of British Columbia and the new state of Alaska. The following statement reveals the importance of lumbering in Idaho and adjacent areas:

> These industries, consisting primarily of lumber, pulp and paper, and plywood and veneer, are among the most important of the manufacturing

> group in the West. Indeed, in the four Pacific Northwest states of Washington, Oregon, Idaho, and Montana, and in British Columbia, they are the most important judged by value added by manufacture or numbers employed. (Guthrie and Armstrong, 1961, p. xi) [Italics theirs]

The importance of lumbering in the western states is reflected more specifically in the following excerpt:

> Value added by the lumber industry in the eleven western states increased from 42 per cent of the national total in 1929 to 56 per cent in 1954, and value added by the pulp and paper industry went from 7 per cent in 1929 to 13 per cent in 1954. In the veneer and plywood industry, value added rose from a negligible figure in 1929, when the industry was in its infancy, to 65 per cent of the national total in 1954, a phenomenal expansion. (Guthrie and Armstrong, 1961, pp. 5-7)

Elsewhere, Guthrie and Armstrong (1961, p. 52) state that the lumber industry is most important, followed in order by the pulp and paper industry, and the plywood and veneer industry in terms of value of product, numbers employed, or wood used. They conclude, in projecting growth rates to 1975, that the pulp and paper industry, and the plywood and veneer industry, will continue to grow rapidly in the West. Lumber should exhibit a more moderate growth. (Guthrie and Armstrong, 1961, pp. xi, 101, 111, 210, 211, 218, 279, 286, & 289)

The Forest Service Study

The Forest Service made a comprehensive study of lumbering, with projections to the year 2000, based on data gathered in a nationwide forest survey. The following quotation contains figures on lumbering in the West, and a general projection for future years:

> The Pacific Coast States of Alaska, Washington, Oregon, California, and Hawaii have 70 million acres of commercial forest land. Although this represents only 14 percent of all commercial forests in the United States, the Pacific coast has 55 percent of the Nation's total sawtimber volume, and 66 percent of the softwood sawtimber inventory. . . . Some areas of commercial forest in this section are of low growth capability, but almost 56 percent of the total area is capable of producing more than 85 cubic feet of timber per acre per year.
>
> This section also has been supplying about 59 percent of all the softwood lumber produced in the United States, virtually all of the softwood plywood, and one-fifth of the woodpulp. About 62 percent of the total softwood sawtimber cut in 1962 was from the Pacific coast. Because of the large volume and relatively high quality of the remaining timber inventory, this section will continue to supply a large share of the Nation's wood products for decades to come. (Forest Service, 1965, pp. 114-115)

The Hair and Ulrich Study

Hair and Ulrich reported several data, most of which pertained to the

current status of the lumber industry. The following comments, however, seem appropriate for inclusion here:

> During the last 10 years consumption of pulpwood has increased at an average annual rate of 4.1 percent--or somewhat more than 1.6 million cords a year. In view of the present wave of expansion now underway in the wood pulp industry and the projected increases in population and economic activity, continued rapid growth in pulpwood use is expected. (Hair and Ulrich, 1965, p. 12)

The Bonneville Power Administration Study

The Bonneville Power Administration currently is conducting a study of forest products which eventually will be published under the title: "Prospective Economic Developments Based on the Timber Resources of the Pacific Northwest," as part of a series in the Economic Base Study for Power Requirements. The following data were received in a personal communication (dated October 15, 1965) from the Bonneville Power Administration, United States Department of the Interior, Portland, Oregon, and are quoted with their permission:

> Projections of potential demands for lumber show a gradual increase from 37.3 billion board feet in 1962 to 45.5 billion board feet in 1985, a rise of about 22 percent. This upward trend is based on the assumption that the substitution of competing materials for lumber in housing, shipping, and other end uses will proceed at a slower pace in the future than it has in the past; also such displacement will be more than offset by the increase in construction, industrial production, and other associated activities.
>
> Projected demand for plywood and veneer will rise from 12 billion square feet in 1962 to 24.2 billion square feet in 1985 (3/8 inch basis).
>
> The total volume of wood required to produce the pulp, paper and board products consumed in the U. S. in 1962 amounted to 52.8 million cords. A detailed statistical analysis of prospective demands for pulp, paper and board indicated that by 1985 potential demand will approximate 99.5 million cords, nearly twice the level of consumption in 1962.

The following statements will constitute a part of the Summary of the forthcoming report of the Bonneville Power Administration, and confirm further the importance of lumbering in the Pacific Northwest:

> The Pacific Northwest will continue to be an important source of wood products for five principal reasons:
>
> a. The commercial forest lands of the Pacific Northwest contain over half of the total softwood sawtimber in the United States.
>
> b. Much of this volume is in large, old-growth, overmature timber; this is the main source of quality softwoods for the Nation.
>
> c. Forest soils are among the most productive in the Nation.

d. The opportunity for realizing a high level of forest management is considerably greater here than elsewhere in the Nation, because 80 percent of the commercial forest land is in public and forest industry ownership.

e. The Pacific Northwest has a well-developed, highly integrated forest industry converting timber into wood products.

Foreign Competition in Lumbering

Foreign imports of lumber products come principally from Canada. This influences the lumber industry throughout the United States, but since the Northwest is adjacent to Canada and depends heavily on lumbering, Canadian competition perhaps has more effect here than elsewhere. Not much lumber and related products are exported from the United States. For example, Guthrie and Armstrong (1961, p. 278) state that approximately 95 per cent of the lumber produced is consumed in U. S. markets. They point out, rather, that the U. S. has been a major importer of lumber since 1941 (Guthrie and Armstrong, 1961, p. 64). The Business and Defense Services Administration (1965c, p. 115) states that:

> . . . imports . . . rose 56 percent from 3.4 billion board feet in 1960 to 5.3 billion feet in 1964. Imports consist mainly of softwoods from Canada, which have a competitive advantage in the U.S. market. The increase of softwood imports from approximately 4 percent of total domestic consumption in 1947 to about 15 percent in 1964 is a matter of continuous concern to the domestic industry.

Hair and Ulrich (1965, p. 6) observe that:

> Trade reports in the first half of 1965 indicate that total net imports of timber products, including the roundwood equivalent of lumber, plywood, veneer, wood pulp, and paper and board will be about 1.7 billion cubic feet. This would be about 5 percent above the 1964 figure, and a high in a trend that has been rising fairly rapidly in the last two decades.

The Forest Service (1965, p. 2) states that about 13 per cent of the total roundwood consumed in U. S. markets in 1962 came from imports, and, regarding the future:

> Some further increases in net imports of lumber and pulpwood products are expected, mainly from Canada which has extensive undeveloped softwood timber resources. Additional imports of hardwood veneer and plywood from tropical forests also are considered likely.

Finally, the Bonneville Power Administration (Personal Communication, October 15, 1965) states that:

> In view of recent upward trends in imports, and the relative availability of undeveloped soft-wood timber resources in Canada, it seems

likely that net imports will rise. Net imports have therefore been projected to increase from about 4.1 billion board feet in 1962 to about 6.1 billion board feet in 1985.

The implications of Canadian competition for the lumber industry will be discussed further in a later report. It should be noted, in passing, that increased foreign competition will have a definite effect on lumbering in the Northwest. More efficient operations and increased sales and marketing activities may be expected.

It is evident, from the contents of this division of our report, that Idaho and adjacent states in the Northwest will continue to depend on the lumber industry for an important segment of their economic livelihood. The next division focuses on the lumber industry in the State of Idaho.

LUMBERING IN IDAHO

As already stated at the beginning of this report, lumbering is a basic primary sector of the Idaho economy. This is especially true of the area from Boise northward to the Canadian line. Here we shall examine certain facts concerning lumbering in Idaho, and projections for the future. The material is presented under three headings, as follows: Timber Cut, Available Supply, and General Outlook; Past, Present, and Projected Employment; and Data for Two Large Lumber Companies.

Timber Cut, Available Supply, and General Outlook

According to Guthrie and Armstrong (1961, pp. 169-170), Idaho lumbering may not expand quite as rapidly as in other western states:

> Idaho has held consistently over time to a production representing about 6 per cent of the western total. This is close to its representative portion of the sawtimber volume (7.1 per cent), and, in view of expected cutbacks in timber sales by both state and private ownership in the near future, we can probably assume a drop in per cent cut to something between 5 and 6 per cent by 1975.

The Forest Service (1965, p. 120) notes the following condition which may tend to dampen somewhat the expansion of lumbering in Idaho:

> Parts of the Rocky Mountain forest area have long supported substantial forest industries, and in some areas there is now more industrial plant capacity than can be kept supplied with logs with current levels of timber management. This is the situation in the Inland Empire of northern Idaho and western Montana and much of the pine area of the southern Rockies.

Another important factor, according to some lumbermen, is the lack of access roads into national forest areas with good timber stands. Idaho lumbering could be expanded more rapidly if some of the presently inaccessible timber could be reached. It seems likely, therefore, that several lumber companies in Idaho may experience keen competition for available supplies of

timber in the next few years.

On the other hand, production figures for National Forest land in Idaho 1950 through 1964 show that the cut of timber has increased gradually over this period of time. We obtained figures for all timber cut each year in the national forests from the U. S. Forest Service, Northern Region, Missoula, Montana (Personal Communications dated December 1 and December 8, 1965). The following are the cut figures by calendar year for that portion of Region 1 in Idaho north of the Salmon River:

Year	Volume Cut MBF*	Year	Volume Cut MBF*	Year	Volume Cut MBF*
1950	136,720	1955	384,705	1960	436,415
1951	187,155	1956	387,635	1961	443,853
1952	210,997	1957	301,960	1962	423,647
1953	292,140	1958	349,921	1963	579,433
1954	278,711	1959	449,015	1964	506,732

*Thousands of Board Feet

The following is a graphic presentation of the above figures:

Figure 1

Volume of Timber Cut 1950-1964 in Idaho
North of the Salmon River

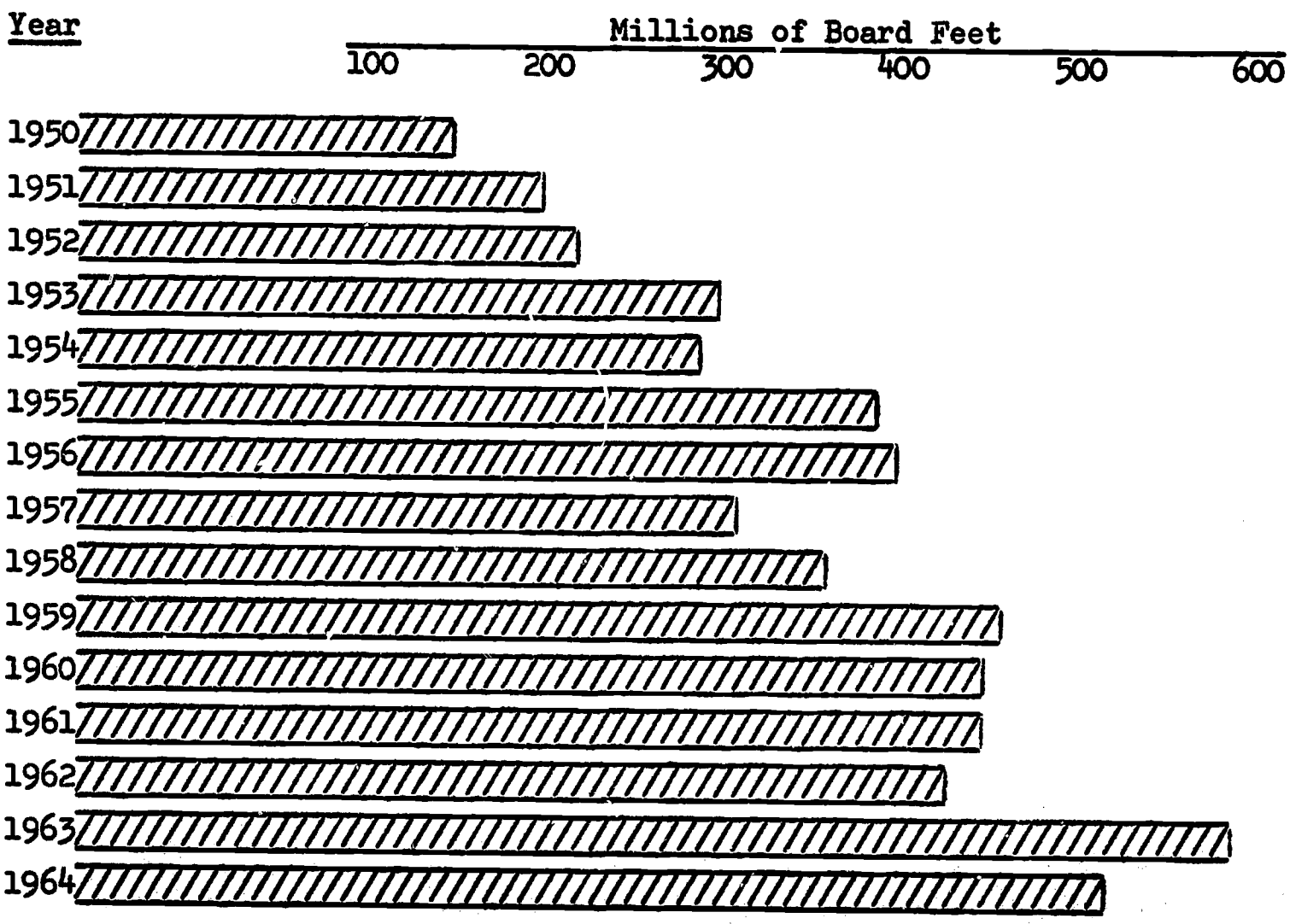


Figure 1 illustrates that, despite fluctuations for individual years, the trend has been clearly upward during this period. The present allowable cut for this portion of Region 1 is 561.4 million board feet per year. (Note: This figure and those reflected in Figure 1 consist almost entirely of mature live sawtimber) Since this figure is higher than any of the annual cut figures reported on the previous page, a slight increase from this source would be possible. It should be noted that these figures do not include additional timber cut on state and private lands.

Another set of data was obtained from the Western Wood Products Association, Portland, Oregon (Personal Communication, January 7, 1966). The following are figures for annual lumber production in Idaho:

Year	Volume Produced MMBF*	Year	Volume Produced MMBF*	Year	Volume Produced MMBF*
1950	1,259.4	1955	1,529.3	1960	1,654.0
1951	1,021.9	1956	1,608.4	1961	1,497.0
1952	1,083.4	1957	1,319.9	1962	1,585.0
1953	1,157.1	1958	1,422.9	1963	1,624.0**
1954	1,397.8	1959	1,788.0	1964	1,680.0**

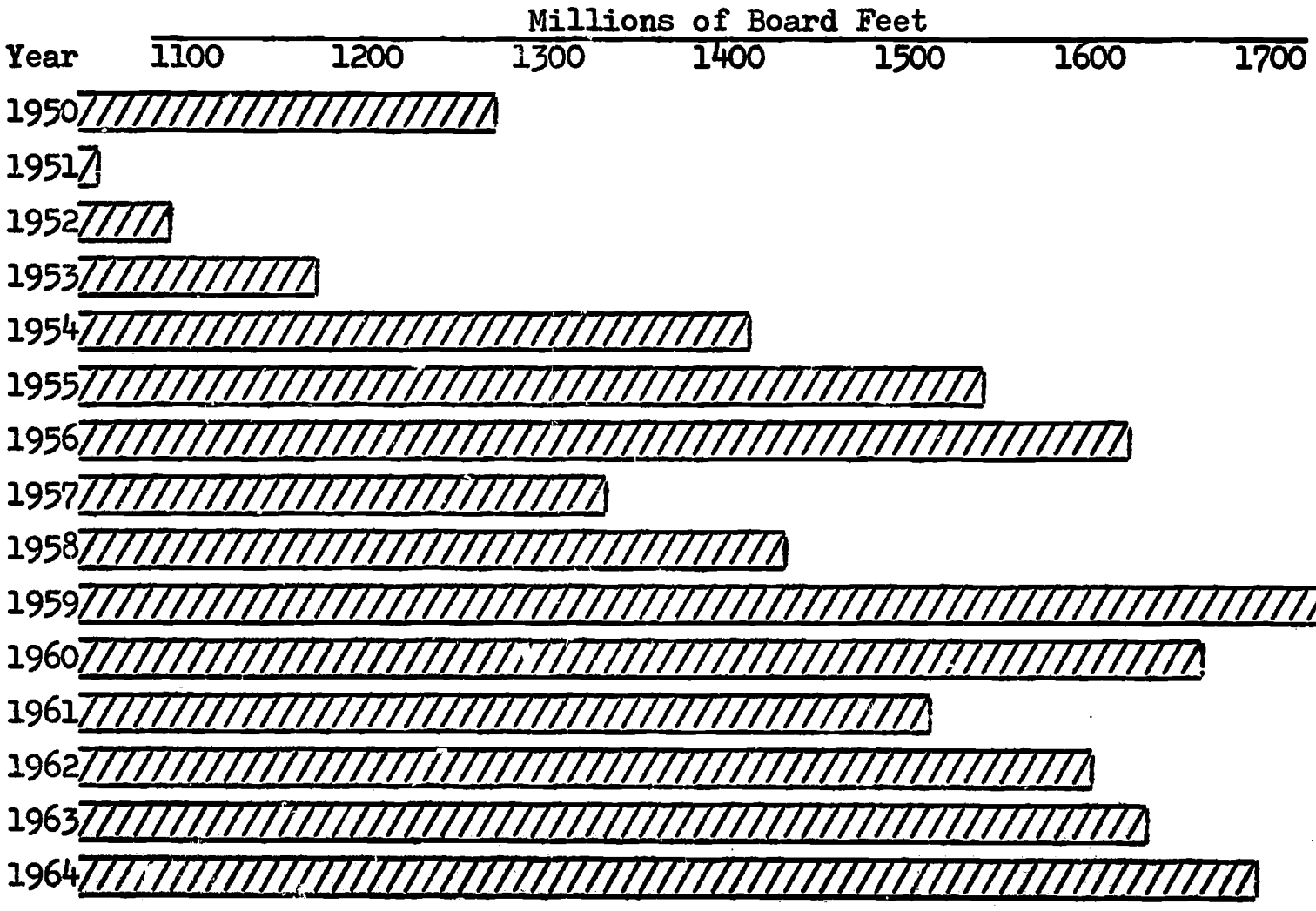
*Millions of Board Feet

**Preliminary, Subject to Revision

The above figures appear below in graphic form:

Figure 2

Annual Lumber Production in Idaho 1950-1964



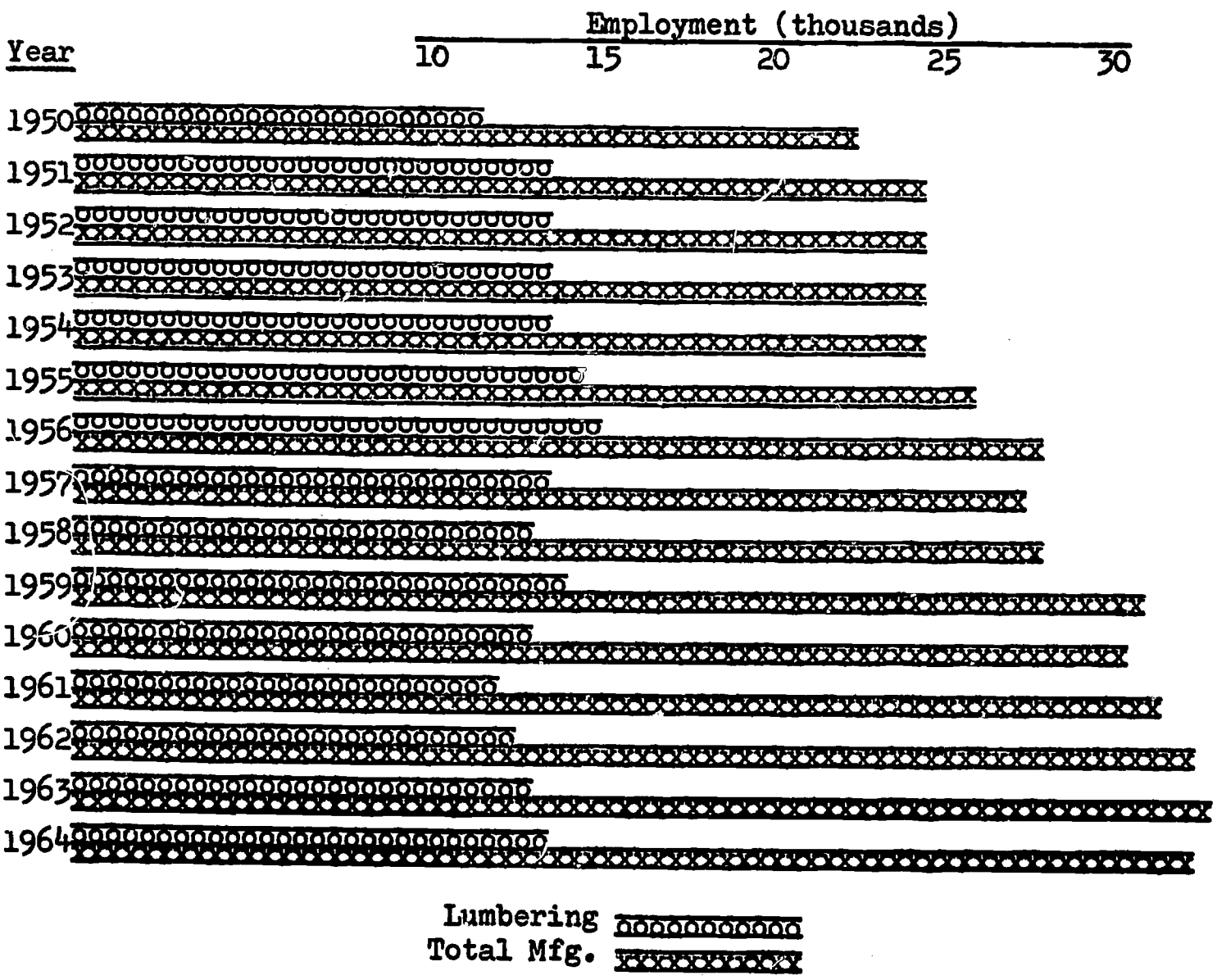
Once again, despite yearly fluctuations, there is an upward trend over this period of time. On the other hand, the figures since 1959 suggest that production may be leveling off somewhat. Production may rise in the future, but it may be at a slower rate than in the past.

Past, Present, and Projected Employment

Annual average employment 1950-1964 is presented in Table I, page 13, for lumbering, total manufacturing, and for the Civilian Labor Force of the State of Idaho. The figures were supplied by the Department of Employment, State of Idaho, Boise. The employment figures for lumbering and for total manufacturing show important trend differences, as revealed in the graph below:

Figure 3

Annual Average Employment in Lumbering and Total Manufacturing 1950-1964



It is evident that, generally speaking, employment in total manufacturing has risen over this period of 15 years. Lumbering employment, after a slight increase in the mid-1950's, has gradually declined.

The data in Table I, page 13--especially the percentages in the last

Table I

ANNUAL AVERAGE EMPLOYMENT IN THE CIVILIAN LABOR FORCE, TOTAL MANUFACTURING, AND LUMBERING 1950-1964

Year	CLF*	Total Mfg.	Lumber**	Mfg. as % of CLF*	Lumber As % of CLF*	Lumber As % of Mfg.
1950	229,900	21,835	12,136	9%	5.3%	56%
1951	239,100	24,086	13,113	10%	5.5%	54%
1952	231,000	24,086	12,704	10%	5.5%	53%
1953	228,500	23,920	12,719	10%	5.6%	53%
1954	227,600	23,932	12,895	11%	5.7%	54%
1955	231,400	25,452	14,081	11%	6.1%	55%
1956	241,100	27,309	14,694	11%	6.1%	54%
1957	243,500	27,089	13,008	11%	5.3%	48%
1958	245,600	27,659	12,397	11%	5.0%	45%
1959	249,100	30,310	13,497	12%	5.4%	45%
1960	247,700	30,173	12,579	12%	5.1%	42%
1961	249,400	30,816	11,637	12%	4.7%	38%
1962	252,000	31,825	11,840	13%	4.7%	37%
1963	251,500	32,456	12,335	13%	4.9%	38%
1964	253,300	31,773	12,879	13%	5.1%	41%

*Civilian Labor Force; figures in second column rounded to nearest 100.
**Includes lumber products, logging, veneer and plywood, paper and allied products, and miscellaneous. Separate figures not shown, as this would reveal employment for individual firms.

three columns--also reveal the upward trend of total manufacturing employment and the downward trend of lumbering employment. Total manufacturing increased from 9 per cent to 13 per cent of the employment within the Civilian Labor Force over the 15-year period. Lumbering was 5.3 per cent in 1950, rose to a high of 6.1 per cent in 1955 and 1956, but by 1964 had dropped to 5.1 per cent, or .2 per cent lower than a decade and a half earlier. The drop in lumbering employment is even more evident as a percentage of total manufacturing, as the drop was from 56 per cent to 41 per cent over the 15-year period.

It seems apparent that employment in lumbering will continue to decline in the next few years, a trend which is characteristic of the Pacific Northwest. The Bonneville Power Administration (Personal Communication, October 15, 1965) makes the following projection for Idaho:

> Employment in Northern Idaho by the year 1985 is estimated to be 10 percent less than in 1962. This is a continuation of the downward trend that occurred between 1950 and 1962. This decrease occurs mainly in the sawmills and planing mills due to little or no increase in production coupled with reduced employment per unit. Sawmill employment decreases by 1,400 people, or 24 percent. In addition to this, a decrease of 22 percent is anticipated in logging.

Regarding expected output, taking into account dead timber and residue used to make products, the Bonneville Power Administration makes the following projections for the Pacific Northwest:

	1962	1985	% Change
Lumber products, million bd. ft., lumber tally	13,700	13,800	+.7%
Veneer and plywood, million sq. ft., 3/8 inch basis	8,100	14,000	+73%
Woodpulp, million tons	4.6	11.0	+139%
Other products, million cu. ft.	183	255	+39%

Regarding employment, the Bonneville Power Administration makes the following projections for the Pacific Northwest:

	1962	1985	% Change
Logging	26,800	23,800	-11%
Sawmills and planing mills	55,700	31,100	-44%
Veneer and plywood plants	33,800	37,400	+11%
Paper and allied products	26,600	36,800	+38%
All other wood manufacture	14,700	16,000	+9%
Totals:	157,600	145,100	-8%

(Note: Percentages of Change were computed by the Occupational Research Unit Staff)

The above figures indicate that Idaho and the Pacific Northwest will

experience changes in lumbering similar to those projected by the authors and agencies cited earlier in this report, namely, only a moderate increase in lumber products, and marked increases in veneer and plywood, and paper and allied products. The rapid growth of veneer and plywood, and paper and allied products has been reflected in Idaho the last few years. Guthrie and Armstrong (1961, p. 130) prepared a map which showed, in 1955, two veneer and plywood plants in Idaho--probably the veneer plant of the Clearwater Unit of Potlatch Forests, Inc., at Lewiston, and the Idaho Veneer Company, at Post Falls. Since that time, the St. Maries Plywood Company, St. Maries, and the Jaype Mill of Potlatch Forests, Inc., Pierce, have been built and have gone into production. A small veneer operation also was installed at the Payette mill of the Boise Cascade Corporation. The employment and output in veneer and plywood thus have more than doubled, and further increases may be expected. Guthrie and Armstrong (1961, p. 109) also prepared a map which showed one pulp and paper mill in Idaho--presumably the one located at the Clearwater Unit of Potlatch Forests, Inc. in Lewiston. Since that time, the Clearwater Tissue Mill was built at the Clearwater Unit, and employment in the paper and pulp division was expanded some 10 to 15 per cent. It should be noted, however, that employment in veneer and plywood, and paper and allied products is still a minority in Idaho lumbering, and a considerable amount of the growth here has resulted in declines in the output of other lumber products.

It is important to note a somewhat paradoxical situation which has developed in lumbering the last several years, and which seems likely to continue in the future. This is the continuing increase in output coupled with a continuing decline in the number of persons employed. Mechanization, automation, and increased efficiency within the industry epitomize the changes which face the present and future worker. This will be treated more thoroughly in a later report, but it seems appropriate here to suggest that such changes will demand a little more ability and training on the part of lumbering employees.

A final paradox seems worthy of consideration as we close this section. If lumbering employment is declining, some may ask: "What employment opportunities, if any, will the industry offer?" Again, we defer detail to a later report. We have found, however, due to turnover, retirements, etc. within the industry, that several hundred employment opportunities should develop in Idaho each year, despite the gradual decline in total employment.

Data For Two Large Lumber Companies

This report thus far has dealt with general information on the national, regional, and state levels. It seems appropriate, in closing, to present some data for two large lumber companies in Idaho. The companies are Boise Cascade Corporation, with their national headquarters in Boise, and Potlatch Forests, Inc. Potlatch maintained their national headquarters in Lewiston until the summer of 1965, when the headquarters was transferred to San Francisco, California.

The two companies are good examples of an "integrated forest product company." This expression refers to a notable trend in the lumber industry. The integrated forest product company is so organized that it utilizes practically every part of a tree. We visited one of the Boise Cascade plants in our field research, and a description by an old hand fairly well sums it up: "We don't waste anything. The logs are cut up into as much lumber as possible. The slabs and even the sawdust and shavings either are burned as power fuel or are ground into chips for making paper. The bark has at least two uses. It is either ground finely, and treated with ammonia to form compost, or it is coarsely ground to be used in landscaping. Even the needles, cones, and small limbs can be mixed with an adhesive and pressed into wall board which reveals the contents in its surface texture. The only thing left that we haven't been able to market is the squeal of the saws."

Such complete utilization of timber has not been achieved throughout the industry. Many smaller mills, especially, still burn a considerable portion of each log they process, simply because they do not have processing facilities or a market for their waste products. On the other hand, more complete timber utilization is a definite trend which may be expected to continue. Already, many small mills have installed machinery for processing waste products formerly burned, and sell to the larger companies. This trend obviously contributes to the conservation of our timber resources. The integrated forest product company also requires a wider variety of jobs as timber processing becomes more complete. We have concluded from observations in our field research, that the increasing variety and complexity of jobs call for a little more ability and training on the part of the worker.

Potlatch Forests, Inc. and Boise Cascade Corporation have plants and distribution and sales facilities in many parts of the United States in addition to their holdings in Idaho. Potlatch Forests, Inc. (Clifford, 1963), as of 1963, had manufacturing facilities in eleven states and sales offices in twenty-five cities. Boise Cascade Corporation (1964) reported 67 end product converting plants and 153 distribution centers. Both companies produce a wide variety of products, such as lumber, plywood, paper and pulp, food cartons, fine papers, and many other specialty products.

Several years ago, Fortune began publishing in their July issue each year a list of the five hundred largest industrial corporations in the United States. Boise Cascade Corporation entered this list in 1958, and Potlatch Forests, Inc. entered a year earlier in 1957. Both companies have remained in the list each year from their first entry through 1964 (The Fortune Directory, 1958-1965). A perusal of the financial and related data over these years reveals that both companies, through both expansions and acquisitions, have shown important gains. (Note: We found at least one instance where the Fortune data do not coincide with figures reported by one of the companies in their annual report. We suggest, therefore, that anyone interested in detail contact the companies directly for verification of the Fortune data) For example, sales figures for Boise Cascade Corporation more than quadrupled 1958-1964, and sales figures for Potlatch Forests, Inc. 1957-1964 more than doubled. We noted further that the most

recent listing for 1964 did not contain any other Idaho companies. We interpreted this as another indication of the importance of this industry to the economy of the State of Idaho

A FINAL NOTE

This report has covered, in a general way, the lumbering industry of the Nation, the Pacific Northwest, and the State of Idaho. The entire report contains much information which may lead to different interpretations. We believe it is appropriate, therefore, to make four statements in closing which should aid interpretation. First, economic reports which make future projections usually state several assumptions, such as no major wars, no depressions, continued defense spending, etc. Projections for lumbering in our report assume future conditions will not be influenced by unexpected major events in the United States or in the rest of the world. Second, our list of references is not intended to be exhaustive. We examined more reports than were quoted, but we believe those selected are among the best available, and that they present a realistic picture of anticipated developments. Third, several excerpts were taken from our list of references. It is quite possible that taking the statements from their original context has, in some cases, altered their meaning. We suggest that the interested reader should examine some of the reference materials if more information is desired. Fourth, despite our generous use of material from several references, we assume full responsibility for the contents of this report.

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